

REMARKS

Claims 1-46 are pending. Claims 1, 6, 12, 17, 23, , 28, 33, 36, and 39 have been amended to further define the invention. No new matter has been added as a result of these amendments.

Rejections under 35 USC 112

Claims 6-11 and 17-22 were rejected under 35 USC 112 as containing subject matter not described in the specification in such a way to reasonably convey to one skilled in the art that the inventor had possession of the claimed invention. Applicants respectfully request that this rejection be withdrawn as the claimed subject matter is fully supported by figures 14 and 15 and the corresponding text on pages 25-28 of the application. If the examiner maintains this rejection, the Applicants respectfully request that the Examiner provide a reasonable basis for this rejection to challenge the adequacy of the written description including the above-referenced sections.

Rejections under 35 USC 103(a)

Claims 1-15, 17-24, 26, 28-31, 33, 34, and 36-38 were rejected as being unpatentable over the articles by Sloan et al. and Purcell et al. In light of the amendments and the arguments contained herein, the Applicants respectfully request reconsideration of these rejections.

Independent claims 1, 6, 12, 17, 23, 28, 33, and 36 have been amended. More specifically, each independent claim has been amended to include the features of the

calculations being performed within a single graphics processing unit, i.e., without the need for a CPU to become involved in the calculations (see paragraphs 72-76).

In response to the rejections, the Applicants respectfully submit that one skilled in the art would not have combined the references as suggested by the Examiner to derive the currently claimed invention. More particularly, one skilled in the art would not have combined Sloan and Purcell to perform the operations in real time through a single graphics processing unit (GPU). Under the combination of Sloan and Purcell the geometry for a frame of data is provided to a GPU from a central processing unit (CPU). Purcell then teaches that the GPU would produce from this geometry a transfer function. The transfer function would then have to be sent back to the CPU to have the geometry assembled as each vertex is associated with a transfer function, as taught by Sloan. This data would then be sent back to the GPU to put polygons on the screen through a normal rasterization process. This back and forth processing would be unable to be performed frame by frame in real time, e.g., for a video game. The combination of Sloan and Purcell provide a single solution and the back and forth processing between the CPU and GPU required for multiple frames of data would prevent the capability of performing these operation in real time for multiple frames of video, such as in a video game application. The Examiner is referred to section 6.2, paragraph 3, where Sloan explicitly states that precision issues and inability to perform inner force projection of the sampled radiance images into software. Applicants respectfully request that the Examiner elaborate how this teaching of Sloan can be ignored if this rejection is maintained. Thus, in summary, Applicants respectfully request that one skilled in the art would not have combined the references as suggested by the Examiner, as Sloan and Purcell require the

Application No. 10/645,819
Office action response dated July 24, 2006
Responsive to Office Action Dated February 22, 2006

use of a CPU to perform the calculations. Each of the independent claims is allowable for at least the above-stated reasons, as well as the corresponding dependent claims. In addition, the remaining cited references do nothing to cure the deficiencies noted above with regard to Sloan and Purcell. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection in light of the amendments and the arguments presented herein.

In view of the foregoing, Applicants respectfully submit that all of the pending claims are in condition for allowance. A notice of allowance is respectfully requested. In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 774-6921. If any fees are due in connection with the filing of this paper, then the Commissioner is authorized to charge such fees to Deposit Account No. 50-0805 (Order No. SONYP024). A copy of the transmittal is enclosed for this purpose.

Respectfully submitted,
MARTINE PENILLA & GENCARELLA, LLP



Michael L. Gencarella
Registration No. 44,703

710 Lakeway Drive, Suite 200
Sunnyvale, California 94085
Telephone: (408) 749-6900
Customer No. 25920